

**AMENDMENTS TO THE CLAIMS**

This listing of the claims will replace all prior versions, and listings, of claims in the application.

**Listing of the Claims**

Claims 1-2 (Cancelled)

3. (Currently Amended) A method for the measurement of differential heat flux, said method comprising the steps of:
- (a) providing a heat transfer reference surface;
  - (b) providing a heat transfer fouling surface;
  - (c) providing a heat transfer path capable of transferring heat flux between said reference surface and said fouling surface;
  - (d) providing a pair of heat flux sensors, one of said sensors connected to said reference surface and the other one of said sensors connected to said fouling surface, wherein said sensors are not temperature sensors;
  - (e) measuring heat flux values directly from each said sensor;
  - (f) calculating differential heat flux data across said heat transfer path from said heat flux values; and
  - (g) utilizing said differential heat flux data to detect and quantify deposit accumulation at said fouling surface.

4. (Original) The method of claim 3 wherein said differential heat flux data is calculated according to the formula  $\Delta Q_t = Q_r - C \cdot Q_r$ .

5. (Previously Presented) The method of claim 3 wherein cleaning of said reference surface is provided by mechanical brushing.

6. (Previously Presented) The method of claim 4 wherein cleaning of said reference surface is provided by mechanical brushing.

7. (Previously Presented) The method of claim 3 wherein sonic waves are used to keep said reference surface clean.

8. (Previously Presented) The method of claim 4 wherein sonic waves are used to keep said reference surface clean.

Claims 9-10 (Cancelled)

11. (Previously Presented) The method of claim 3 wherein said reference surface is kept clean by adding a solution to fluid exiting from said fouling surface.

12. (Cancelled)

13. (Previously Presented) The method of claim 11 wherein said solution is synthetic cooling fluid.

Claims 14-18 (Cancelled)

19. (Original) The method of claim 3 further comprising the steps of:

- (a) generating a signal indicative of said heat flux data;
- (b) transmitting said signal to a microprocessor which continuously calculates, records, and displays said heat flux data.

20. (Original) The method of claim 4 further comprising the steps of:

- (a) generating a signal indicative of said heat flux data;

(b) transmitting said signal to a microprocessor which continuously calculates, records, and displays said heat flux data.

21. (Original) The method of claim 5 further comprising the steps of:

- (a) generating a signal indicative of said heat flux data;
- (b) transmitting said signal to a microprocessor which continuously calculates, records, and displays said heat flux data.

22. (Original) The method of claim 6 further comprising the steps of:

- (a) generating a signal indicative of said heat flux data;
- (b) transmitting said signal to a microprocessor which continuously calculates, records, and displays said heat flux data.

23. (Original) The method of claim 7 further comprising the steps of:

- (a) generating a signal indicative of said heat flux data;
- (b) transmitting said signal to a microprocessor which continuously calculates, records, and displays said heat flux data.

24. (Original) The method of claim 8 further comprising the steps of:

- (a) generating a signal indicative of said heat flux data;
- (b) transmitting said signal to a microprocessor which continuously calculates, records, and displays said heat flux data.

Claims 25-26 (Cancelled)

27. (Original) The method of claim 11 further comprising the steps of:

- (a) generating a signal indicative of said heat flux data;

(b) transmitting said signal to a microprocessor which continuously calculates, records, and displays said heat flux data.

28. (Cancelled)

29. (Original) The method of claim 13 further comprising the steps of:

- (a) generating a signal indicative of said heat flux data;
- (b) transmitting said signal to a microprocessor which continuously calculates, records, and displays said heat flux data.

Claims 30-34 (Cancelled)

35. (Previously Presented) The method of claim 3 wherein said heat flux sensors are thin-film heat flux sensors.

36. (Previously Presented) The method of claim 3 wherein said heat flux sensors are responsive to heat energy at said reference surface and said fouling surface.

37. (Previously Presented) The method of claim 3 wherein said reference surface is kept clean by generation of acids or oxidizing reagents with electrochemical cells.

38. (Previously Presented) The method of claim 11, wherein said solution is an acid or chemical which prevents bio-fouling or mineral deposition.